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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/932,578	08/17/2001	Blake Lewis	103.1072.01	5197

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EXAMINER
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LE, MIRANDA

ART UNIT	PAPER NUMBER
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2177

DATE MAILED: 08/10/2004

12

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

09/932,578

Applicant(s)

LEWIS ET AL.

Examiner

Miranda Le

Art Unit

2177

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 17 August 2001.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 24-39 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 24-39 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date 3.
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_.

**DETAILED ACTION**

1. Claims 1-23 are canceled. Claims 24-39 are pending in this application.

***Claim Rejections - 35 USC § 102***

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless:

(e) the invention was described in

(1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or

(2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

3. Claims 24-35, 37 are rejected under 35 U.S.C. 102(e) as being anticipated by Sekido et al. (US Patent No. 6,311,193).

Sekido anticipated independent claims 24, 25, 32, 35, 37 by the following:

**As per claim 24**, Sekido teaches "A method of operating a file system, said file system including an active map of information indicating in-use and free blocks" at col. 18, line 55 to col. 19, line 22, col. 17, lines 23-63,

“said file system maintaining a set of snapshots, each snapshot including a representation of said file system as it was at an earlier time, said method including” at col. 18, line 55 to col. 19, line 22, col. 17, lines 23-63,

“making write allocation decisions in response to a copy of an earlier active map included in at least one of said snapshots” at col. 18, lines 55-61, col. 17, lines 23-62.

**As per claim 25**, Sekido teaches “A method of operating a file system, said file system including an active map of information indicating in-use- and free blocks” at col. 18, line 55 to col. 19, line 22, col. 17, lines 23-63,

“said file system maintaining a set of snapshots, each snapshot including a representation of said file system as it was at an earlier time, a method of updating said summary map, said method including” at col. 18, line 55 to col. 19, line 22,

“computing a summary map in response to at least one copy of an earlier active map included in at least one of said snapshots” at col. 18, line 55 to col. 19, line 22, Fig. 35.

**As per claim 32**, Sekido teaches “In a file system including an active map of information indicating in-use and free block” at col. 18, line 55 to col. 19, line 22, col. 17, lines 23-63,

“said file system maintaining a set of snapshots , each snapshot including a representation of said file system as it was at an earlier time” at col. 18, line 55 to col. 19, line 22, col. 17, lines 23-63,

“said file system maintaining a summary map in response to at least one copy of an earlier active map included in at least one of said snapshots, a method of updating said summary map, said method including” at col. 18, line 55 to col. 19, line 28,

“receiving a request to delete a selected snapshot” at col. 18, line 55 to col. 19, line 28;

“for a block used by said selected snapshot, indicating said block is free in said summary map only in response to a snapshot just prior to said selected snapshot and in response to a snapshot just after said selected snapshot” at col. 18, line 55 to col. 19, line 28.

**As per claim 35**, Sekido teaches “In a file system including an active map of information indicating in-use and free blocks” at col. 18, line 55 to col. 19, line 22, col. 17, lines 23-63,

“said file system maintaining a set of snapshots, each snapshot including a representation of said file system as it was at an earlier time” at col. 18, line 55 to col. 19, line 22, col. 17, lines 23-63,

“said file system maintaining a summary map in response to at least one copy of an earlier active map included in at least one of said snapshots, a method of updating said summary map, said method including” at col. 17, lines 23-63,

“selecting a set of blocks maintained by said file system for which to perform a write allocation operation” at col. 18, line 55 to col. 19, line 22;

“updating only a portion of said summary map corresponding to said set of blocks, in response to said selecting” at col. 17, lines 23-63; and

“performing said write allocation operation in response to said updated summary map” at col. 17, lines 23-63.

**As per claim 37**, Sekido teaches “In a file system including an active map of information indicating in-use and free blocks” at col. 18, line 55 to col. 19, line 22, col. 17, lines 23-63,

“said file system maintaining a set of snapshots, each snapshot including a representation of said file system as it was at an earlier time” at col. 18, line 55 to col. 19, line 22, col. 17, lines 23-63,

“said file system maintaining a summary map in response to at least one copy of an earlier active map included in at least one of said snapshots, a method of updating said summary map, said method including” at col. 17, lines 23-63,

Sekido teaches “refraining from indicating a selected block as free in response to whether said selected block is included in said copy of an earlier active map” at col. 17, lines 23-63.

**As per claim 26**, Sekido teaches “making write allocation decisions in response to said summary map” at col. 18, line 55 to col. 19, line 27, col. 17, lines 23-63.

**As per claim 27**, Sekido teaches “said set of snapshots includes at least two said snapshots” at col. 17, lines 23-65;

“a result of said computing includes an indicator of a union of all blocks indicated by at least two said copies of earlier active maps included in said set of snapshots” at col. 18, line 55 to col. 19, line 27, Fig. 35.

**As per claim 28**, Sekido teaches “said set of snapshots includes at least two said snapshots” at col. 17, lines 23-65;

“said computing includes performing a bitwise logical operation on at least two said copies of earlier active maps included in said set of snapshots” at col. 17, lines 23-65, col. 18, line 55 to col. 19, line 27.

**As per claim 29**, Sekido teaches “making write allocation decisions both in response to a current active map and in response to said summary map” at col. 17, line 23 to col. 18, line 3.

**As per claim 30**, Sekido teaches “computing a combination of a current active map and said summary map” at col. 18, line 55 to col. 19, line 22;

“making write allocation decisions in response to a result of said computing” at col. 17, line 23 to col. 18, line 3.

**As per claim 31**, Sekido teaches “for a selected portion of said summary map identifying a set of snapshots created since a recent update of said selected portion” at col. 18, line 55 to col. 19, line 22, col. 17, lines 23-63;

“updating said selected portion in response to only a most recent one of said snapshots” at col. 17, lines 23-63.

**As per claim 33**, Sekido teaches “said indicating frees said block only when both said block is unused by said snapshot just prior to said selected snapshot’ at col. 17, line 23 to col. 18, line 3;

“said block is unused by said snapshot just after said selected snapshot” at col. 17, line 23 to col. 18, line 3.

**As per claim 34**, Sekido teaches “wherein said snapshot just after said selected snapshot corresponds to an active file system” at col. 17, line 23 to col. 18, line 3.

***Claim Rejections - 35 USC § 103***

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

5. Claims 36, 38-39 are rejected under 35 U.S.C. 103(a) as being unpatentable over Sekido et al. (US Patent No. 6,31,193), as applied to claims above, in view of Rungta et al. (US Patent No. 6,484,186).



**As per claim 36**, Sekido teaches “In a file system including an active map of information indicating in-use and free blocks” at col. 18, line 55 to col. 19, line 22, col. 17, lines 23-63,

“said file system maintaining a set of snapshots, each snapshot including a representation of said file system as it was at an earlier time” at col. 18, line 55 to col. 19, line 22, col. 17, lines 23-63,

“said file system maintaining a summary map in response to at least one copy of an earlier active map included in at least one of said snapshots, a method of updating said summary map, said method including” at col. 17, lines 23-63,

Sekido does not specifically teach “while generating a consistency point, selecting a set of blocks maintained by said file system and updating only a portion of said summary map corresponding to said set of blocks”. However, Rungta teaches this limitation at col. 3, lines 18-46.

It would have been obvious to one ordinarily skilled in the art at the time of the invention to include “while generating a consistency point, selecting a set of blocks maintained by said file system and updating only a portion of said summary map corresponding to said set of blocks” in order to provide a method that allows an archive operation to backup a consistent version of files while the files are open for writing.

**As per claim 38**, Sekido teaches “In a file system including an active map of information indicating in-use and free blocks, a method of updating said active map, said method including” at col. 18, line 55 to col. 19, line 22,

“maintaining a plurality of copies of said active map, at least a first said copy being a substantially true representation of in-use- and free blocks” at col. 17, lines 23-63,

“and at least a second said copy being a representation of in-use and free blocks which reflects fewer free blocks than said first copy” at col. 17, lines 23-63;

Sekido does not specifically teach “wherein said second copy refrains from indicating a selected block as free until after a next consistency point is completed”. However, Rungta teaches this limitation at col. 3, lines 18-46.

It would have been obvious to one ordinarily skilled in the art at the time of the invention to include “wherein said second copy refrains from indicating a selected block as free until after a next consistency point is completed” in order to provide a method that allows an archive operation to backup a consistent version of files while the files are open for writing.

**As per claim 39**, Rungta teaches “swapping said second copy with said first copy after said consistency point is completed” at col. 3, lines 18-46.

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### Conclusion

6. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Miranda Le whose telephone number is (703) 305-3203. The examiner can normally be reached on Monday through Friday from 8:30 AM to 5:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, John E. Breene, can be reached on (703) 305-9790. The fax number to this Art Unit is (703) 872-9306. The TC 2100's Customer Service number is (703) 306-5631.

Any inquiry of a general nature or relating to the status of this application should be directed to the Group receptionist whose telephone number is (703) 305-3900.



Miranda Le  
July 26, 2004



GRETA ROBINSON  
PRIMARY EXAMINER